

Claims

- [c1] 1. A plug, used to connect with a USB receptacle, wherein the receptacle has an outer frame including at least four elastic plates located at inner side of the outer frame, and a first holder, wherein a plurality of metal connection terminals are implemented on the first holder, the plug comprising:
a plurality of metal connection terminals being exposed, used to correspondingly contact the metal connection terminals of the receptacle when the plug is electrically connected to the metal connection terminals of the receptacle; and
a second holder, used to hold the metal connection terminals of the plug, wherein after the plug is connected to the receptacle, at least two of the elastic plates of the receptacle at top are not contacting the plug.
- [c2] 2. The plug of claim 1, wherein between the inner side of the outer frame and a first surface of the first holder, a first space is formed, and the second holder has a protruding part, and the protruding will insert into the first space when the plug and the receptacle are connected.
- [c3] 3. The plug of claim 1, wherein after the plug and the receptacle are connected, at least one of the elastic plates contacts the plug and at least one of the elastic plates is located at bottom inner side of the outer frame.
- [c4] 4. The plug of claim 1, wherein the second holder comprises at least one elastic plate, and the least one elastic plate contacts the receptacle after the plug is inserted to the receptacle.
- [c5] 5. The plug of claim 4, wherein a first space is formed between the inner side of the outer frame and a first surface of the first holder, as well as an edge of the metal frame is inserted into the first space when the plug and the receptacle are connected.
- [c6] 6. The plug of claim 4, wherein the metal frame has an opening, which is located at a position with respect to a power terminal of the receptacle when the plug is connected in reverse to the receptacle.
- [c7] 7. The plug of claim 1, wherein the receptacle includes a USB series A

receptacle, and the thickness of the plug is less than about 0.38cm.

- [c8] 8. The plug of claim 1, wherein the plug is installed an apparatus.
- [c9] 9. The plug of claim 8, wherein the apparatus has an indent space, and the plug is implemented within the indent spacer and can be shifted out or retract back, when the plug is to be connected to the receptacle, the plug is shifted out and when the plug is not connected to the receptacle, the plug remains in the indent space.
- [c10] 10. The plug of claim 8, wherein the apparatus is silicon disk or memory card.
- [c11] 11. The plug of claim 1, further comprising a protection cap, which can be implemented on the second holder in retractable function, wherein the first holder is located between the protection cap and the second holder when the plug and the receptacle are connected.
- [c12] 12. A plug, used to connect with a USB Series " Mini " receptacle, wherein the receptacle has an outer frame including at least one elastic plates located at inner side of the outer frame, and a first holder, wherein a plurality of metal connection terminals are implemented on the first holder, the plug comprising: a plurality of metal connection terminals being exposed, used to correspondingly contact the metal connection terminals of the receptacle when the plug is electrically connected to the metal connection terminals of the receptacle; and a second holder, used to hold the metal connection terminals of the plug, wherein the second holder optionally includes a frame.
- [c13] 13. The plug of claim 12, wherein the thickness of the plug is less than 0.15 cm.
- [c14] 14. The plug of claim 12, wherein after the plug is connected to the receptacle, at least one of the elastic plates elastically contacts the plug.
- [c15] 15. The plug of claim 12, wherein between the inner side of the outer frame and a first surface of the first holder, a first space is formed, and the second holder has a protruding part, and the protruding inserts into the first space when the

plug and the receptacle are connected.

[c16] 16. The plug of claim 12, wherein the receptacle comprises USB series Mini-A, series Mini-B, or series Mini-AB.

[c17] 17. The plug of claim 12, wherein the plug is installed on a digital apparatus.

[c18] 18. The plug of claim 17, wherein the apparatus has an indent space, and the plug is implemented within the indent spacer and can be shifted out or retract back, when the plug is to be connected to the receptacle, the plug is shifted out and when the plug is not connected to the receptacle, the plug remains in the indent space.

[c19] 19. The plug of claim 17, wherein the apparatus is silicon disk or memory card.

[c20] 20. A plug, used to connect with a USB connector, wherein the USB connector has an outer frame, and a first holder, wherein a plurality of metal connection terminals are implemented on the first holder, the plug comprising:
a plurality of metal connection terminals being exposed, used to correspondingly contact the metal connection terminals of the receptacle when the plug is electrically connected to the metal connection terminals of the receptacle; and
a non-metal second holder, used to hold the exposed metal connection terminals of the plug, wherein the plug optionally includes a metal frame, whereby the thickness of the plug is less than about 0.38 cm

[c21] 21. The plug of claim 20, wherein when the second holder has at least one elastic plate, and the at least one elastic plate elastically contacts the USB connector after the second holder is inserted to the USB connector.

[c22] 22. The plug of claim 20, wherein the USB connector has an outer frame with at least one elastic plate, the at least one elastic plate elastically contact the plug after the plug is inserted into the USB connector.

[c23] 23. The plug of claim 20, wherein the second holder contacts the outer frame of the connector after the plug is inserted into the USB connector.

[c24] 24. The plug of claim 20, wherein the USB connector comprises one of plugs and receptacles in one of USB series Mini-A, series Mini-B, and series Mini-AB.

[c25] 25. A memory card comprising:
at least one memory part, used to store information;
at least one controller, used to control data communication, wherein the controller optionally is integrated with the memory part;
a plug, capable of being put back, used to connect to a connector of a USB series; and
optionally a first I/O port, used to be externally connected to a second I/O port, wherein the memory card can select the first I/O port or the plug to connect to an electronic device for information communication, wherein the thickness of the memory card is less than 0.38cm.

[c26] 26. The memory card of claim 25, comprising one selected from the group consisting of an IC card, a CF card, a SD card, a multimedia card, an XD picture card, a memory stick card, a memory stick duo card, a MG memory stick card, a smart media card, a Microdrive card, a PCMCIA card, and a USB silicon disk,.

[c27] 27. The memory card of claim 25, wherein the plug, the memory part, and the at least one controller can be separated from the memory card to form another independent memory card.

[c28] 28. A memory card comprising:
a memory part, used to store information;
a controller, used to control information communication, optionally can be integrated with the memory part;
a plug, capable of being put back, used to be connected to a connector; and
optionally a first I/O port, used to be externally connected to a second I/O port; wherein the memory card can select the first I/O port to connect to the second I/O port of an electronic device, or select the plug to connect to a connector of an electronic device, so as to have information communication,
wherein the memory card comprises one selected from the group consisting of an IC card, a CF card, a SD card, a multimedia card, a XD picture card, a MG memory stick card, a memory stick duo card, a memory stick card, a smart

media card, a Microdrive card, a PCMCIA card, and a USB silicon disk.

- [c29] 29. An information storage device, connected with a digital device for data access, the information storage device comprising:
- a memory part, used to store information;
 - at least one controller, used to control information transmission, and optionally being integrated with the memory part;
 - at least two different I/O connectors, wherein one of the at least two I/O connectors includes a plug, which can be connected to a USB series A connector of the digital device, the plug comprises:
 - a plurality of exposed metal connection terminals being exposed, used to electrically connect to corresponding metal connection terminals of the USB series connector after the plug is connected to the USB connector, a thickness of the plug is less than 0.38 cm; and
 - a non-metal holder, used to hold the metal connection terminals of the plug, wherein the holder can optionally include a metal frame rack,
 - wherein the memory part comprises one selected from the group consisting of an IC card, a CF card, a SD card, a multimedia card, a XD picture card, a MG memory stick card, a memory stick duo card, a memory stick card, a Microdrive card, a PCMCIA card, and a USB silicon disk.
- [c30] 30. A connecting device, comprising:
- at least two connectors, for connecting at least two different connectors installed on a single information storage device, which has been plugged therein; or capable of connecting to one connector installed on the single information storage device.
- [c31] 31. The memory card of claim 30, wherein the single information storage device comprises one selected from the group consisting of an IC card, a CF card, a SD card, a XD picture card, a memory stick duo card, a memory stick card, a multimedia card, a MG memory stick card, a smart media card, a Microdrive card, a PCMCIA card, and a USB silicon disk.
- [c32] 32. The memory card of claim 30, wherein the single information storage device includes a master card associating with an independent card

- [c33] 33. A connection architecture of an information storage device, implemented inside of a digital apparatus; comprising: at least dual connector; and a slot, allowing a single information storage device to be plugged in, wherein the single information storage device includes at least two different connectors or at least one single connector, wherein the at least dual connector can be connected to at least two different connector or the at least one connector on the single information storage device, which is plugged into the single slot.
- [c34] 34. The connection architecture of claim 33, wherein the single information storage device comprises one selected from the group consisting of an IC card, a CF card, a SD card, a multimedia card, a XD picture card, a memory stick duo card, a MG memory stick card, a smart media card, a Microdrive card, a PCMCIA card, and a USB silicon disk.
- [c35] 35. The connection architecture of claim 33, wherein the single information storage device includes a master card associating with an independent card.
- [c36] 36. A plug, used to connect with a USB series A receptacle, wherein the receptacle has an outer frame including at least four elastic plates located at inner side of the outer frame, and a first holder, wherein a plurality of metal connection terminals are implemented on the first holder, the plug comprising: a plurality of metal connection terminals, used to correspondingly electrically connect to the metal connection terminals of the receptacle when the plug is electrically connected to the metal connection terminals of the receptacle; and a second holder, used to hold the metal connection terminals of the plug; and an outer frame, used to insert into the outer frame of the receptacle; wherein a thickness of the plug is less than about 0.38 cm.
- [c37] 37. The Plug of claim 36, wherein the second holder has a reduced thickness, so that the thickness of the plug is less than about 0.38 cm.
- [c38] 38. The Plug of claim 36, wherein after the plug is connected to the receptacle, at least one of the elastic plates of the receptacle at bottom is not contacting with the plug.
- [c39] 39. The plug of claim 35, wherein the plug is implemented on an apparatus,

and the apparatus has an indent space, the plug can be inner packed in the indent space, when the plug is to be connected to the receptacle, the plug can be shifted out from the indent space, and when the plug is not connected to the receptacle, the plug can be shifted back into the indent space.

[c40] 40. A memory card A comprising:
 at least one memory part, used to store information;
 at least one controller, used to control information communication, optionally being integrated with the memory part;
 at least one plug, which can be used to connected to a connector of a USB series for information communication with an electronic device ; and
 optionally comprising a first I/O port to connect to the second I/O of an electronic apparatus A;
 wherein a memory card B can be released from or retracted back to the memory card A, and the memory card A can provide the function of storing and accessing information on the memory card B, the memory card B can be plugged into a card slot,
 wherein the memory card B includes one selected form the group consisting of an IC card, a CF card, a SD card, a multimedia card, a XD picture card, a memory stick card, a memory stick duo card, a MG memory stick card, a smart media card, a Microdrive card, a PCMCIA card, and a USB silicon disk,
 wherein the memory card A can select the first I/O port or the plug to connect to the second I/O port of the electronic apparatus A, so as to have information communication,
 wherein the memory card B optionally includes a controller and an I/O port for connecting with an external electronic apparatus B to control information transmission.

[c41] 41. The memory card A of claim 40, wherein the memory card comprises one selected form the group consisting of an IC card, a CF card, a SD card, a multimedia card, a XD picture card, a memory stick card, a memory stick duo card, a MG memory stick card, a smart media card, a Microdrive card, a PCMCIA card, and a USB silicon disk.

- [c42] 42. A memory card architecture, comprising:
- a master card, having an I/O port, capable of connecting with a first external electronic device;
 - a first controlling unit, implemented on the mater card, used to convert the I/O port into a USB interface; and
 - a memory card, having a second control unit and a USB interface I/O port member, capable of connection with a second external electronic device,
- wherein the memory card can be mounted on the master card as a choice from a user, and by a mechanical operation or a direct connection, the USB interface I/O port member can be coupled with the USB interface,
- wherein only one at a time can be selected for information communication from the group consisting of case 1 that the USB interface I/O port member of the memory card is coupled with the USB interface and case 2 that the USB interface I/O port member of the memory card is coupled with the second external electronic device.
43. The memory card architecture of claim 42, wherein when the memory card is mounted on the master card, the first control unit and the second control unit can be optionally coupled together.